



# The Market and Inflation

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**1. The Market.** Those collective financial instruments we affectionately love and hate with each swing of the investment pendulum. We love it. We hate it. Often, we even loath it. The market is that one subject that simultaneously creates unity and discord across sophisticated persons in civilized economies. Such is debated at work and at home—in churches and in bars. When it is good, we are good, and when it is bad, we are, well, not so good. To some, the market is nothing more than legalized gambling, a sin; and to others, it represents the holy grail of capitalism.

**2. Inflation.** That word that seems to loom over a successful society as it waits with bated breath to capture and destroy its prey just as it appears all is well. Inflation is patient; it rests as it watches the market and its economy ever so kilter from its balanced positions and trends, from those that can be sustained. It waits without angst, for it has no deadline. There is no rush; it will strike when ready—not a day late, nor a day early. At least in our minds, it represents the antithesis of success as it waits to destroy that which we have earned—that which is ours.

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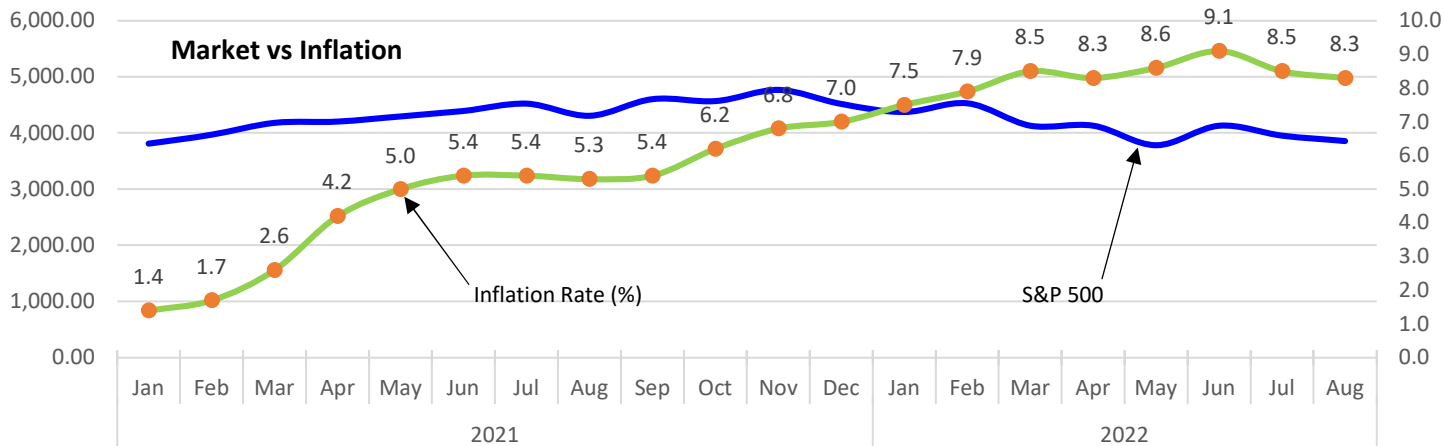
**3. Oil & Water.** Indeed, the market and inflation run juxtaposed, or at least such seems to be the case. When inflation is down, we expect the market to be relatively strong. When the market regresses negatively, we panic as inflation wrings its hands in anticipation of the pounce, that pounce that will take down both the market and economy. Like opposing forces of oil and water, the market and inflation act somewhat in opposition as they are forced to behave collectively to find some form of balance. With the infiltration of inflation, the market attempts to solidify; and the more repressive the infiltration, the more the market tends to withdraw unto itself, at least to a level that presents as some semblance of comfort.

However, such is not always as it seems. True, inflation often wreaks havoc on economies. To the average American, inflation serves as an oppressive yoke across the shoulders of every American, those who work and contribute to the economy, and well, to those who choose otherwise. Everyday products cost more and more which results in less and less. Staples like food increase to the point where even making a sandwich is difficult for some. And coupling this with unnecessary economic demands levied upon us by poor decision makers, like high gas prices, makes life almost impossible, as every loose dollar must be spent on rising costs. Then again, the market rises and falls without asking for permission, per se, and inflation responds the same, at least to a large extent.

In a bit more of a technical sense, inflation results when prices outpace what an economy, and its market, can support. Its interaction makes for a complex quantitative construct that we currently only fundamentally understand. So, from a lay perspective, let's investigate this perplexing relationship between the market and inflation further.

**4. The Relationship.** The relationship between the market and inflation varies with time. Consider the relationship over the last several months (January 2021—August 2022) between market output and inflation graphically below. Biden entered office with essentially no inflation. A few months into his term, his policies radically changed the United States. For example, the inflation rate in January 2021 was a negligible 1.4 percent, but a few months later, the inflation rate had soared to 9.1 percent (June 2022), an increase of 550 percent. Consumer prices have now soared, reaching heights fewer and fewer can afford.

Subsequently, we expect inflation to have had a serious impact on the market, as well. And indeed, the relationship appears to be inverse by observation, i.e., as inflation increases, market output decreases, and we would expect as such. However, such is not the case. In this case, the relationship between market output and inflation is non-existent, meaning there is no relationship ( $r=.003$ ,  $p=.990$ ) between these variables, and hence, inflation had no effect on market output,  $F(1,18)=0.046$ ,  $p=.832$ . That said, note that we determined that inflation during this period had no effect on the market; such does not necessarily hold true for inflation’s effect on the economy, itself, e.g., consumer prices, GDP.



Expanding our investigation on this relationship from January 1970—August 2022 (Refer to the attached graph), inflation has averaged 4.0 percent ( $SD=0.6$ ) since January 1970. Years with the highest inflation, excluding those of our current year, were found from 1974—1975 and 1979—1981, with those rates hovering around 10 to 11 percent. The relationship between the market and inflation over this period is  $-0.376$  ( $p<.001$ ), meaning as inflation increased, market output decreased. Even then, inflation only explained 14.2 percent of the variance in the market, which, in statistical terms is certainly not negligible, but it is low to serve as a stand-alone predictor of market output. Nonetheless, the effect was statistically significant,  $F(1,630)=103.8$ ,  $p<.001$ , so such cannot be overlooked. Refer to the graph attached to review the interaction between the market and inflation.

**5. The Elephant in the Room.** Really understanding the impact inflation has on the market and its economy requires a lifetime of study, and then some. Economists and researchers have long remained puzzled over this relationship. We understand the fundamentals of the market, inflation, and their interaction, but there is more to learn. After decades, even centuries, of investigation and debate among the scientific community, we have yet to definitively agree to the *causal* shifts in the market associated with inflation. Certainly, we can run Granger Causality and other econometrics to determine such mathematically, but the overall debate continues.

Nonetheless, what we have uncovered in our mini-investigation regarding the relationship between the market and inflation potentially lies outside the effect of inflation, altogether. It begs us to address the elephant in the room. Disregard inflation on the figure attached (Noted in green) and refer to output from the market (Noted in blue as S&P 500). Note the parabolic nature of the convex curve for the market. Around 1985, we begin seeing a slight uptick in the market (Trend B); recall during this time that Clinton was in office, and the economy was sound. Around 10 years later (1995), the market began regressing even more strongly as it steepened the slope of the convex curve of its upward trend, as noted in Trend B, then Trends C & E. In Trends C & E, we visually see trends radically develop that outpace statistical sustainability; and exactly as we modeled and forecasted, the market did indeed collapse in years 2000, and again in 2008. The pending collapse should have been easily recognized years prior to its occurrence, as these upward radical trends grossly defied one of the most basic “laws” of statistics, *regression to the mean*. Of course, society was too self-absorbed with success during these times, paying no attention to countless red flags, so billions and trillions were lost in the market as investors hastily sold off their shares and businesses collapsed, especially from 2007—2010.

Years of sweat working to invest for retirement vanished in a matter of days. As witnesses and even participates in this game of financial ruin, especially in 2008, one would think we learned our lesson, but what happened? As investors, we forged ahead, and within two years, the market corrected. It required 8 years for the Obama Administration to correct the economy, but even then, note how we responded in the market—we overcorrected. We set the market on a trajectory once again that was unsustainable with basic laws of statistics; note Trends G, J, and L. In fact, during that time, the market immediately set itself on a course ripe for correction around 2009—2010 through 2019-2020 (Trends G, J & L); and after an ill-fated attempt to correct itself in 2020, the market unexpectedly increased its rate of return even more strongly (Trend L), almost trending completely perpendicular to the horizon through December 2021 (Trend M) when this current correction began. And worse, we knew the market was poised to grossly correct, yet we did nothing to circumvent it or soften it, not investors, not the Federal Reserve.

**6. What we Know.** The relationship between the market and inflation can easily be measured statistically, but the relationship is complex, and even thought provoking. Many variables within the economy have been determined to be causal variables as it relates to market shifts, as well as whether those relationships are unidirectional or bi-directional, but inflation as a causal predictor of market conditions remains debatable, as many spurious relationships co-exist within this relationship. In our case here, we did not address inflation as a causal variable of the market as the topic is too complex for those without substantial statistics backgrounds. Nonetheless, we found the relationship between the market and inflation from 1970 through the present to be inverse ( $r=-0.376$ ,  $p<.001$ ); then again, such is not always the case, as we demonstrated earlier. We also found that inflation over this period had a statistically significant effect on market output,  $F(1,630)=103.8$ ,  $p<.001$ , a construct that also does not always hold true. More importantly, however, but extraneous to our investigation, we revealed serious issues associated not so much with the relationship between the market and inflation, but through consideration of market output in isolation of other variables, especially as it related to investors' responses following market downturns. For example, in every case we reviewed, investors over compensated following market stabilization, creating unsustainable anomalies in post-correction (bull) trends that violated fundamental laws of statistics.

**7. What we Expect.** We rarely disseminate our knowledge regarding future market expectations to the masses; such is simply reserved for our clients. However, given current concerns across the investment community, perhaps it would be selfish to end while noting nothing of these current concerns. In 2021, we modeled the S&P 500 and several other variables in the US, both endogenous and exogenous. Our models clearly depicted the S&P 500 index hitting 3,650, then bouncing as the market attempted to find some form of stabilization from which to eventually turn. And such has occurred; today we have hit 3,650, stopping around 3,580, meaning our modeling error rate was a negligible 0.0158 (1.58%). However, there are no guarantees in the market, especially when that market is impacted by an unstable economy. That said, a few "experts" have suggested the market will further decline, with one financial guru suggesting the S&P 500 will hit 1,500, an index we have not seen since 2012. Of course, that guru lacked the substantial credentials to make such a comment based on sound econometric analytics, but he did, nonetheless. As for our professional opinion, we stand by our low for the market to be around 3,650, or within this area, as it eventually stabilizes before turning upward again. However, that stabilization may require a few months, with the market bouncing before it turns. Broadly, we anticipate the return on the S&P 500 to be 8—10 percent over the next year.

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**Herbert M Barber, Jr, PhD, PhD** serves as the Managing Partner and Chief Investment Officer of Xicon Economics. Intersecting the fields of engineering, finance, econometrics, and statistics, Dr. Barber is an expert in computational financial economics as it relates to the subjugation of random walk theory and navigation of constructs surrounding efficient market hypotheses, especially within assets operating under extreme uncertainty. For over 30 years, he has provided advisory, consulting, and management of large capital investments in the private and public sectors. Additionally, Dr. Barber has published numerous scientific papers in refereed journals. Complementing his experience, Dr. Barber holds 5 academic degrees, including two research doctorates.

**Xicon Economics** provides investment research, financial and investment advisory, and asset management for corporations and investors. More specifically, we conduct scientific and applied research coupled with advanced statistical and econometric analyses and modeling to render complex financial and economic decisions to ensure investments are realized. While we have solved countless complex financial and economic problems, we concentrate our practice on leveraging our expertise to increase output on hedge funds and alternative investments. Additional information regarding Xicon Economics can be found at [www.xiconeconomics.com](http://www.xiconeconomics.com).

# Market vs Inflation

